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CARE OR MAKEUP COMPOSITION CONTAINING FIBERS AND A HYDROPHILIC  
ORGANOPOLYSILOXANE

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The invention relates to a care or makeup composition for keratinous materials such as skin, lips or appendages of the skin containing fibers and particles of a solid elastomeric organopolysiloxane that is at least partially crosslinked in suspension in an aqueous phase, conferring a homogeneous deposit on these keratinous materials even while imparting softness

and freshness. This composition is in particular a foundation for makeup for the face or body or a nonfatty lipstick.

The invention also has as a goal the use of fibers and particles of a solid elastomeric organopolysiloxane that is at least partially crosslinked in suspension in an aqueous phase in a care or makeup composition for keratinous materials to confer a homogeneous deposit and freshness.

[0001]

The present invention relates to a composition containing fibers and an aqueous dispersion of an organopolysiloxane intended for the cosmetic and dermatological fields. More specifically, the invention is applied to the care and/or treatment and/or makeup of keratinous materials such as the skin, including the scalp, the lips of the face and the appendages of the skin such as eyelashes, eyebrows, nails and hair of human beings. This composition is soft and fresh upon application, spreads easily, and is not sticky and does not dry the skin and lips. It is perfectly adapted to oily skin because of its high matting ability.

[0002]

This composition can be presented especially in the form of a cast product in a stick or a small dish such as lipsticks or lip balms, cast foundations, concealer products, deodorants, eyeshadows or blush; in the form of a paste or cream that is more or less fluid, such as liquid foundations or lipsticks, eyeliners, mascaras, care compositions, sunscreens or skin coloring, makeup for the body or even makeup for the nails and hair; or in the form of aqueous, gel like medicated shampoos.

[0003]

The use of fibers in makeup products is known, especially for their lengthening effects in mascaras (see JP-A-57/158714), their "textile" feel (see JP-A-7/196440), their tissue effect or even their moisturizing properties in lipsticks (see the document US-A-5 498 407) or for improving the contours of lipsticks on the edges of the lips (see the document EP-A-0 106 762). Unfortunately, it is very difficult to disperse fibers in compositions homogeneously and without forming clumps, which in a colored composition and makeup in particular generally confers a makeup that is not uniform and not very aesthetic, without a very distinct outline. In addition, this difficulty of dispersion leads to compositions with cosmetic properties that are not constant and not very reproducible, which causes problems with industrial production as well as high production costs.

[0004]

The makeup products or products for care of the skin or lips of human beings, such as foundations or lipsticks, generally contain fatty phases such as waxes and oils, pigments and/or fillers and possibly additives such as cosmetic or dermatological active substances. The fillers are generally used to modify the texture of the composition and in particular to make it rigid as well as to matte the composition film deposited on the skin and/or the lips, which is particularly sought for users with mixed or oily skin, as well as in hot and humid climates. On the other hand, the pigments generally act to impart color to the composition. Unfortunately, the fillers used for matting do not impart freshness but rather dryness to the skin as well as tightness and discomfort.

[0005]

Therefore, there remains a need for a composition that does not have the above drawbacks, and especially does not dry the skin or lips on which it is applied, as much during application as over time, and confers homogeneous aesthetic makeup or care, supplying freshness even while matting.

[0006]

The invention justly has as a goal a care and/or treatment and/or makeup composition for keratinous materials making it possible to remedy these drawbacks. Surprisingly, the applicant has found that the use of fibers and an aqueous dispersion of partly crosslinked organopolysiloxane in a makeup composition confers good cosmetic properties on the composition and make it possible to obtain a makeup that is homogeneous and uniform, has a distinct outline and, during application, is accompanied by a soft sense of touch and a freshness effect. In addition, this makeup is comfortable to wear throughout the day and has matting properties and water resistance.

[0007]

The invention applies not only to makeup products for the skin, as much for the face as for the human body, and lips of the face but also to makeup products for appendages of the skin such as eyelashes, eyebrows, nails and hair as well as products for care and/or skin treatment including the scalp.

[0008]

More precisely, the invention has as a goal a care or makeup composition for keratinous materials, containing an aqueous phase, solid elastomeric particles of an organosiloxane that is at least partially crosslinked and fibers dispersed in the aqueous phase.

[0009]

In particular, the organopolysiloxane particles and fibers are dispersed, even solubilized directly in the aqueous phase.

[0010]

The invention also has as a goal a cosmetic procedure for the care or treatment of keratinous materials and especially the skin or lips of human beings, comprising the application of the composition in particular cosmetics, on keratinous materials, such as defined above.

[0011]

The invention also has as a goal the cosmetic use of solid elastomeric particles of an organopolysiloxane that is at least partially crosslinked in suspension in an aqueous phase, combined with fibers, in a cosmetic composition especially for the care or makeup of keratinous materials or for the production of a composition for topical application and more specifically of a makeup or care composition for keratinous materials that is resistant to water and/or confers homogeneous and/or fresh and/or matting makeup or care.

[0012]

"Fiber" is necessarily understood to be an object with length  $L$  and diameter  $D$  such that  $L$  is greater than  $D$ ,  $D$  being the diameter of the circle of the cross section of the fiber. In particular, the  $L/D$  ratio (or shape factor) is chosen in the range of 3.5 to 2,500, preferably 5 to 500 and optimally 5 to 150.

[0013]

Advantageously, the aqueous phase contains water and possibly one or more compounds miscible, at least in part, with water, such as polyols, lower  $C_2$  to  $C_5$  monoalcohols and  $C_3$  to  $C_4$  ketones that are liquid at ambient temperature.

[0014]

"Ambient temperature" is necessarily understood to be a temperature of  $25^{\circ}\text{C}$ , at normal atmospheric pressure (76 mm Hg).

[0015]

"Polyol" is necessarily understood to be any organic molecule including at least two free hydroxyl groups. In particular, the polyol(s) of the invention has (have) an IOB value

(Inorganic/Organic Balance) greater than 0.5, in particular of 1 to 7 and more specifically 1.5 to 5.5. These polyols act especially as wetting agents on the fibers.

[0016]

The IOB parameter is known to the specialist in the field from a certain number of publications such as the article by A. Fujita Pharm. Bull. 2, 163-173 (1954) and the documents J 09/151109, J 08/217639 from Shiseido or J 09/175925 from Kose.

[0017]

The following can be mentioned as examples of polyols that meet the preceding criteria and that can be used alone or in mixture in the composition of the invention:

Name	IOB value
Propylene glycol	3.333
Butylene glycol	2.500
Isoprene glycol	2.222
Pentylene glycol	2.000
Hexylene glycol	1.818
PEG-4(*)	2.656
PEG-6	2.396
PEG-8	2.266
Glycerol	5.000
Panthenol	3.125

(\*) Generally, polyethylene glycols (PEG) with 4 to 8 ethylene glycol units can be mentioned.

[0018]

The aqueous phase can represent 1 to 98% of the total weight of the composition, preferably 10 to 95%, and optimally 30 to 95%.

[0019]

The compound(s) miscible with water can be present in an amount of 0 to 30% of the total weight of the composition, especially 0.1 to 30%, and optimally in an amount of 1 to 15%.

[0020]

This composition especially is not sticky to the touch, not oily, and soft upon application, spreading well even while having a homogeneous appearance.

[0021]

The fibers usable in the composition of the invention can be fibers of synthetic, natural, mineral or organic origin. They can be short or long, single or organized, for example twisted, hollow or solid. They can have any shape and especially are circular or polygonal in cross section (square, hexagonal or octagonal) according to the specific application proposed. In particular, their ends are blunt and/or polished to avoid pain in application.

[0022]

In particular, the fibers have a length of 1 nm to 20 mm, preferably 0.1 mm to 5 mm and optimally 0.2 mm to 1.6 mm. Their cross section can be a circle with a diameter of 2 nm to 100  $\mu\text{m}$ , preferably 20 nm to 50  $\mu\text{m}$  and optimally 500 nm to 50  $\mu\text{m}$ . The weight or fineness of the fibers is often given in denier or decitex and represents the weight in grams of 9 km of thread. Preferably, the fibers according to the invention have a fineness chosen in the range of 0.15 to 30 denier, optimally 0.18 to 18 denier.

[0023]

To obtain shiny makeup, which is very specifically sought for makeup for the nails and lips, advantageously short fibers are used that, in particular, have a length of 1 nm to 200  $\mu\text{m}$ . On the other hand, for matte makeup, which is especially sought for makeup for the face (especially for a powder or a foundation), preferably long fibers are used that especially have a length greater than 200  $\mu\text{m}$ .

[0024]

The fibers can be those used in the production of textiles and especially fibers of silk, cotton, wool or linen, cellulose fibers extracted especially from wood, vegetables or algae, polyamide (Nylon®), rayon, viscose, acetate, especially acetate of rayon, cellulose or silk, poly-p-phenyleneterephthalamide, especially Kevlar®, acrylate, especially polymethyl methacrylate or poly-2-hydroxyethyl methacrylate, polyolefin and especially polyethylene or polypropylene, glass, silica, aramid, carbon, especially in the form of graphite, polytetrafluoroethylene (Teflon®), insoluble collagen, polyesters, polyvinyl chloride or polyvinylidene chloride, polyvinyl alcohol, polyacrylonitrile, chitosan, polyurethane, polyethylene phthalate, and fibers formed from a mixture of polymers such as those mentioned above, such as polyamide/polyester fibers.

[0025]

Fibers used in surgery can also be used, such as absorbable synthetic fibers made of glycolic acid and  $\epsilon$ -caprolactone (Monocryl from Johnson & Johnson); absorbable synthetic fibers of the copolymer type of lactic acid and glycolic acid (Vicryl from Johnson & Johnson); terephthalic polyester fibers (Ethibond from Johnson & Johnson) and stainless steel wires (Acier from Johnson & Johnson) especially for application in nail polish.

[0026]

Moreover, the fibers may or may not be surface-treated and may or may not be coated. Polyamide fibers coated with copper sulfide for an antistatic effect (for example, R-STAT from Rhodia) or another polymer enabling a specific organization of the fibers (specific surface treatment) or treatment of the surface inducing effects of colors/holograms (Lurex fiber from Sildorex, for example) can be mentioned as coated fibers used in the invention.

[0027]

Preferably, fibers of synthetic origin and in particular organic fibers such as those used in surgery are used.

[0028]

The usable fibers in the composition according to the invention are preferentially fibers of polyamide or poly-p-phenyleneterephthalamide. The length  $L$  can range from 0.1 to 5 mm, preferably from 0.25 to 1.6 mm and their average diameter  $D$  can range from 5 to 50  $\mu\text{m}$ . In particular, polyamide fibers can be used that are marketed by the P. Bonte company under the name of Polyamide 0.9 Dtex 0.3 mm with an average diameter of 6  $\mu\text{m}$ , 12.2  $\mu\text{m}$  or 20  $\mu\text{m}$ , a weight of approximately 0.9 dtex, and a length of 0.3 mm to 1 mm. Fibers of poly-p-phenylene-terephthalamide with an average diameter of 12  $\mu\text{m}$  and a length of approximately 1.5 mm such as those sold under the name of Kevlar Floc by the DuPont Fibres company can also be used.

[0029]

The concentration of fibers is related to the specific application and the type of product proposed. For a makeup product for the face of the foundation type or type for the lips (lipstick type), the concentration of fibers can range from 0.1 to 20% of the total weight of the composition, preferably from 0.5 to 10%. For a special effect, especially makeup for the body, nails or hair, the quantity of fibers can be 30% of the total weight of the composition.



[0030]

The composition of the invention can be presented in the form of a paste, solid, or cream that is more or less fluid, or even lotion. It can be an aqueous or hydrophilic gel, a dispersion or oil-in-water or water-in-oil emulsion; it can be rigid or flexible, possibly cast as a stick or filled into a small dish.

[0031]

"Elastomeric" organopolysiloxane is understood to be a flexible organopolysiloxane, deformable with viscoelastic properties and especially having the consistency of a sponge or a flexible sphere. Its modulus of elasticity is such that this material resists deformation and has a limited capacity for extension and contraction. This material is capable of regaining its original form after stretching. This elastomer is made of high-molecular-weight polymer chains in which the mobility is limited by a uniform network of crosslinking points.

[0032]

The elastomeric organopolysiloxanes of the composition of the invention have structuring properties in aqueous media and are capable of increasing the viscosity of this aqueous medium, in addition to good cosmetic properties, especially softness, freshness and matting ability. They do not dry the skin. These new elastomers lead to compositions that are comfortable upon application, with good spreading, and are soft and not sticky to the touch. These cosmetic properties are due, on the one hand, to the texture of the organopolysiloxanes, and on the other hand, to their properties that are comparable to that of microsponges trapping aqueous media and in particular those of the composition and those due to perspiration of the skin. They allow, in combination with the fibers, more or less thick compositions to be obtained that have good persistence in water and good stability.

[0033]

The elastomeric organopolysiloxanes in conformance with the invention are hydrophilic compounds that are partially or completely crosslinked and have a three-dimensional structure. The thickening of the aqueous phase by these elastomers can be total or partial. It is entirely surprising that the hydrophilic polymers associated with fibers present properties of persistence in water.

[0034]

The elastomers of the composition of the invention are present in the form of a powder or emulsified gel containing an elastomer organopolysiloxane of three-dimensional structure, dispersed in water. The dispersion (or suspension) of particles is homogeneous.

[0035]

The elastomeric organopolysiloxanes according to the invention can be chosen from crosslinked polymers described in the application JP-A-10/175816. According to this application, they are obtained by an addition and crosslinking reaction in the presence of a catalyst, especially of the platinum type, of at least:

- (a) an organopolysiloxane (i) with at least two vinyl groups in the  $\alpha,\omega$  position of the silicone chain per molecule; and
- (b) an organopolysiloxane (ii) with at least one hydrogen atom bonded to a silicon atom per molecule.

[0036]

In particular, the organopolysiloxane (i) is a polydimethylsiloxane, and more specifically an  $\alpha,\omega$ -dimethylvinylpolydimethylsiloxane.

[0037]

The elastomeric organopolysiloxanes of the composition according to the invention are advantageously presented in the form of a suspension or aqueous dispersion. This suspension can be especially obtained as follows:

- (a) mixture of organopolysiloxane (i) and organopolysiloxane (ii)
- (b) addition of the aqueous phase containing an emulsifier to the mixture of step (a)
- (c) emulsification of the aqueous phase and said mixture
- (d) addition of hot water to the emulsion of phase (c); and
- (e) polymerization of organopolysiloxane (i) and organopolysiloxane (ii) in emulsion in the presence of a platinum catalyst.

[0038]

The water is advantageously added at a temperature of 40-60°C. After step (e) it is possible to dry the obtained particles, to evaporate all or part of the trapped water.

[0039]

The organopolysiloxanes are in the form of hydrophilic deformable solid particles with a certain hardness, measurable with a Shore A durometer (according to the ASTM D2240 standard) at ambient temperature or by the Japanese method JIS-A. This hardness can be measured on a block of elastomer prepared for this purpose as follows: mixture of organopolysiloxane (i) and organopolysiloxane (ii); removal of air from the mixture; molding and curing in the oven at 100°C for 30 min; cooling to ambient temperature then measuring the hardness. The density is also determined on this block of elastomer.

[0040]

In particular, the Shore hardness can vary from 1 to 100 and is advantageously less than or equal to 80, optimally less than 65, for example, between 5 and 50 (boundaries included).

[0041]

The organopolysiloxanes of the composition of the invention are, for example, those marketed under the names BY-29122 and BY-29119 by the Dow-Corning Toray company. A mixture of these commercial products can also be used.

[0042]

A block of elastomer of the product BY-29119 has a hardness of 30 and that of product BY-29122 a hardness of 7. The density is 0.97 to 0.98.

[0043]

Preferentially, the elastomeric organopolysiloxane powder is present in the composition at a level of 0.1 to 70%, preferably 4 to 70%, and optimally 4 to 50%, which corresponds to a level of polymer in the active material of 0.5 to 65% by weight, optimally 3 to 45%. In fact, it constitutes a water-dispersible charge.

[0044]

In particular, the particles of elastomeric organopolysiloxane (in active material) have a size ranging from 0.1 to 500  $\mu\text{m}$ , preferably from 3 to 200  $\mu\text{m}$ , and optimally 10 to 20  $\mu\text{m}$ . These particles can be spherical, flat, or amorphous preferably with a spherical shape. The size of the particles of product BY-29119 and product BY-29122 is 4.5  $\mu\text{m}$ .

[0045]

To disperse these organopolysiloxane particles stably in water, they can be combined with one or more nonionic, cationic or anionic surfactants with  $HLB \geq 8$ . The step (c) is done in particular in the presence of a nonionic surfactant.

[0046]

The proportion of surfactants is preferably 0.1 to 20 parts by weight per 100 parts by weight of elastomeric organopolysiloxane, optimally 0.5 to 10 parts by weight (see description of document JP-A-10/175816).

[0047]

A fatty phase that contains one of several fatty substances that are liquid at ambient temperature, called oils, such as those described in the document JP-A-10/175816, one or more waxes or one or more gums that are solid at ambient temperature, one of several pasty fatty substances of animal, plant, mineral or synthetic origin, their mixtures as well as powders or inorganic fillers such as those described in this document can be combined with the dispersion of elastomeric organopolysiloxane powder and fibers.

[0048]

This additional fatty phase can be of any type and contain, in particular, products fluid at ambient temperature and atmospheric pressure, called oils, such as silicone, fluorinated, fluorosilicone oils and hydrocarbon oils possibly containing some silicone. These oils can be animal-, plant-, mineral- or synthetic-based. These oils can be volatile at ambient temperature and atmospheric pressure. Volatile oil in particular is understood to be an oil capable of evaporating in less than one hour upon contact with the skin or lips.

[0049]

"Fatty phase" is necessarily understood to be a nonaqueous medium, immiscible with water, containing one or more fatty substances chosen from compounds having at least 10 carbon atoms and optimally 16 carbon atoms, silicone compounds, fluorinated compounds, and their mixtures. Organic solvents conventionally used in nail polish are not considered as fatty substances.

[0050]

"Hydrocarbon oil" is understood to be an oil containing in the majority carbon atoms and hydrogen atoms and in particular alkyl or alkenyl chains, such as alkanes or alkenes, but also an oil with alkyl or alkenyl chains including one or more ether, ester or carboxylic acid groups.

[0051]

The following may especially be mentioned as oils usable in the composition of the invention:

- hydrocarbon oils of animal origin such as perhydrosqualene;
- plant hydrocarbon oils such as the triglycerides of fatty acids with 4 to 10 carbon atoms, such as the triglycerides of heptanoic or octanoic acids or even, for example sunflower seed oil, corn oil, soya oil, squash oil, grapeseed oil, sesame oil, hazelnut oil, apricot oil, macadamia oil, arara oil, castor oil, avocado oil, triglycerides of caprylic/capric acids such as those sold by the Stearineries Dubois company or those sold with the names Miglyol 810, 812 and 818 by the Dynamit Nobel company, jojoba oil, shea butter oil;
- synthetic esters and ethers, especially of fatty acids, such as oils with the formula
- $R^1aCOOR^2a$  in which  $R^1a$  represents the residue of a higher fatty acid containing 7 to 29 carbon atoms and  $R^2a$  represents a hydrocarbon chain that may or may not be branched and contains 3 to 30 carbon atoms such as for example purcellin oil, isononyl isononanoate, isopropyl myristate, ethyl-2-hexyl palmitate, octyl-2-dodecyl stearate, octyl-2-dodecyl erucate, isostearyl isostearate, hydroxylated esters such as isostearyl lactate, octyl hydroxystearate, octyldodecyl hydroxystearate, diisostearyl malate, triisocetyl citrate, heptanoates, octanoates, decanoates of fatty alcohols; polyol esters such as propylene glycol dioctanoate, neopentyl glycol diheptanoate, diethylene glycol diisononanoate; and the esters of pentaerythritol such as pentaerythrityl tetraistearate;
- straight-chain or branched hydrocarbons, of mineral or synthetic origin, such as paraffin oils, that may or may not be volatile, and their derivatives, vaseline, polydecenes, hydrogenated polyisobutene such as parleam;
- synthetic esters or ethers such as isopropyl myristate, octanoates, decanoates or ricinoleates of alcohols or polyalcohols;
- fatty alcohols with 12 to 26 carbon atoms such as octyldodecanol, 2-butyloctanol, 2-hexyldecanol, 2-undecylpentadecanol or oleyl alcohol; the fluorinated oils partially hydrocarbonated and/or siliconated such as those described in document JP-A-2-29512;
- silicone oils such as polymethylsiloxanes (PDMS) that may or may not be volatile with linear or cyclic silicone chains, liquid or pasty at ambient temperature; polydimethylsiloxanes including alkyl, alkoxy or phenyl groups pendant or at the end of the silicone chain, groups with

2 to 24 carbon atoms; phenylated silicones such as phenyl trimethicones, phenyl dimethicones, phenyltrimethylsiloxydiphenylsiloxanes, diphenyl dimethicones, diphenylmethyldiphenyl trisiloxanes, 2-phenylethyl trimethyl siloxysilicates and polymethylphenylsiloxanes;  
- their mixtures.

[0052]

These oils can represent 0 to 98.80% of the total weight of the composition, preferably 0.5 to 80%, and optimally 1 to 70%.

[0053]

Advantageously, the composition according to the invention can contain structuring agents of the liquid fatty phase such as waxes, gums and their fillers. The waxes can be hydrocarbon (containing only carbon and hydrogen atoms), fluorinated and/or siliconated, or their mixtures, which can be solid or semisolid (in the form of a paste) at ambient temperature and possibly including ester, hydroxyl or thiol functions. In particular, these waxes have a melting temperature higher than 45°C.

[0054]

The silicone waxes can be waxes including a silicone structure and units with one or more pendant alkyl or alkoxy chains and/or at the end of the silicone structure, these chains being linear or branched and containing 10 to 45 carbon atoms. These waxes are called, respectively, alkyl dimethicones and alkoxy dimethicones. Moreover, these alkyl chains can include one or more ester functions.

[0055]

Other waxes that can be mentioned and can be used in the invention are waxes of animal origin, such as lanolin or beeswax; waxes of plant origin, such as carnauba or candelilla wax; waxes of mineral origin, such as paraffin, lignite or microcrystalline waxes, ceresin or ozokerite; synthetic waxes, such as the polyethylene waxes, Fischer-Tropsch wax, and their mixtures.

[0056]

These fatty substances can be chosen in a variable way by the specialist in order to prepare a composition having the desired properties, for example, of consistency or texture.

[0057]

In particular, the presence of waxes makes it possible to ensure good mechanical resistance, especially when the composition is presented in the shape of a stick.

[0058]

Generally, the wax content can be 0 to 50% of the total weight of the composition, preferably 5 to 30%.

[0059]

The composition of the invention can contain, in addition, any additional additives conventionally used in the field concerned, for example, coloring materials such as pigments, pearlescent agents, water-soluble or liposoluble coloring agents, antioxidants, essential oils, preservatives, cosmetic or dermatological active substances such as emollients, moisturizers (glycerin), vitamins, essential fatty acids, liquid lanolin, and lipophilic or hydrophilic sunscreens, liposoluble polymers, especially hydrocarbons such as polyalkylenes, neutralizing agents, gelling agents or thickeners for the liquid fatty phase, fragrances, and their mixtures.

[0060]

These additives can be present in the composition at quantities conventionally used, for example, 0 to 20% of the total weight of the composition, and optimally 0.1 to 10%.

[0061]

Advantageously, the composition of the invention contains one or more aqueous phase gelling agents or thickeners as additional additives. Among the gelling agents of the aqueous phase that can be used according to the invention, the following may be mentioned: water-soluble cellulose gelling agents, such as hydroxyethylcellulose, methylcellulose, hydroxypropylcellulose and carboxymethylcellulose; guar gum; quaternized guar gum; nonionic guar gum containing C<sub>1</sub>-C<sub>6</sub> hydroxyalkyl groups; xanthan gum, carob gum, scleroglucan gum, gellan gum, rhamsan gum, karaya gum; alginates, maltodextrin, starch and its derivatives, hyaluronic acid and its salts; clays, especially montmorillonites, hectorites or benton[ite]s, laponites; polymers with carboxylic groups, such as crosslinked polyacrylic acids at least partially neutralized such as "Carbopol" or "Carbomer" from the Goodrich Company (Carbomer 980, for example, neutralized with triethanolamine – abbreviated as TEA); glyceryl poly(meth)acrylate polymers; polyvinylpyrrolidone; polyvinyl alcohol; crosslinked polymers and copolymers of acrylamide; crosslinked homopolymers of methacryloyloxyethyltrimethylammonium chloride; associative polyurethanes, and their

mixtures. These gelling agents can represent 0 to 60% of the total weight of the composition, especially 0.1 to 50%.

[0062]

According to the invention, the aqueous phase gelling agent is preferably chosen from xanthan gum, clays (bentone or laponite), associated polyurethanes, cellulose thickeners, especially hydroxyethylcellulose, and crosslinked polyacrylic acids that are at least partially neutralized.

[0063]

Of course, the specialist will attend to choosing the possible additional additives and/or their quantity such that the advantageous properties of the composition according to the invention are not or substantially not altered by the proposed addition. In particular, these additives must not harm the homogeneity, stability, comfort, matting, freshness or water resistance of the composition.

[0064]

The composition according to the invention can be presented in the form of a colored product and especially makeup for the skin, in particular foundation, blush, rouge or eyeshadow, mascara, eyeliner, a stick concealer, nail polish, or makeup for the lips such as lipstick or lip gloss (possibly presenting properties of care or treatment), or a tattooing substance. They can also be presented in uncolored form, possibly containing cosmetic or dermatological active substances. They can also be used as a care base for the lips (lip balm, protecting the lips from the cold and/or the sun and/or the wind) or a fixing base to be applied to the usual lipstick.

[0065]

The composition according to the invention can also be presented in the form of a dermatological or cosmetic composition for treatment or care of the skin (including the scalp), of keratinous fibers (hair, eyelashes, eyebrows), nails or lips, or in the form of a composition for sun protection or artificial tanning, or even a perfuming product. They are then presented in uncolored form, possibly containing cosmetic or dermatological active substances. They can then be used as a care base for the skin and lips (lip balms, protecting the lips from the cold and/or the sun and/or the wind), or day or night care cream. In addition, they can be presented in the form of a shampoo that may or may not be medicated, may or may not be coloring, or in the form of an after-shampoo product.



[0066]

Of course, the composition of the invention must be cosmetically or dermatologically acceptable, namely containing a physiologically acceptable nontoxic medium and capable of being applied on the skin (including the interior of the eyelids) or lips of the face of human beings as well as the appendages of the skin of human beings.

[0067]

Preferentially, the composition of the invention can contain a coloring material especially containing a specific phase, generally present at 0 to 60% of the total weight of the composition, preferably 5 to 35%, and which can contain pigments and/or pearlescent agents and/or fillers conventionally used in cosmetic compositions. The coloring material can also consist of coloring agents that are soluble in the medium and especially lipophilic or hydrophilic, such as Sudan red or brown, methylene blue,  $\beta$ -carotene, beet juice; they can represent 0 to 6% of the total weight of the composition.

[0068]

Pigments are necessarily understood to be white or colored particles, mineral or organic, insoluble in the medium of the composition, intended to color the composition and/or make it opaque. Fillers are necessarily understood to be particles that are uncolored or white, mineral or synthetic, lamellar or nonlamellar. Pearlescent agents are necessarily understood to be iridescent particles especially found in the shells of certain mollusks or even synthesized. These fillers and pearlescent agents act to modify the texture of the composition as well as the matting/gloss effect.

[0069]

The pigments can be present in the composition at 0 to 60% of the weight of the final composition, preferably 0.05 to 25%, and optimally 4 to 20%. As mineral pigments usable in the invention, the following can be mentioned: the oxides of titanium, zirconium or cerium, as well as the oxides of zinc, iron, chromium and ferric blue. Among the organic pigments usable in the invention, carbon black and lakes of barium, strontium, calcium, aluminum and their mixtures can be mentioned.

[0070]

The pearlescent agents can be present in the composition at 0 to 20% of the total weight of the composition, preferably at a level on the order of 1 to 15%. Among the pearlescent agents

that can be used in the invention, mica coated with titanium oxide, iron oxide, natural pigment or bismuth oxychloride, such as colored titanium mica, can be mentioned.

[0071]

The fillers can be present at 0 to 35% of the total weight of the composition, preferably 0.5 to 15%. The following can be especially mentioned: talc, mica, silica, powders of Nylon® (especially Orgasol® from Atochem) and polyethylene, Teflon®, starch, boron nitride, microspheres of copolymers such as Expancel® (Nobel Industrie), Polytrap® (Dow Corning) microbeads of silicone resin (Tospearl® from Toshiba, for example) and their mixtures.

[0072]

The composition according to the invention can be produced in the cold or by heating of one or more elastomeric organopolysiloxanes in powder form dispersed in water, to which are added one or more pigments, one or more fillers and/or one or more other additives, with a possible addition of the fatty phase in the liquid state (especially brought to the highest melting temperature of the waxes), then emulsification, if necessary. It can also be obtained by extrusion as described in the application EP-A-667 146. This procedure consists of mixing the paste (waxes + oils + additives + pigments) during cooling to create zones of crushing of the paste in the mass with the aid of a crushing roll or screw extruder-mixer. This procedure makes it possible to obtain a composition in the form of a soft paste.

[0073]

The invention is illustrated in more detail in the following examples. The percentages given are by weight.

#### Example 1: Foundation

##### Oily phase

[0074]

-	Cyclopentasiloxane	10%
-	KSG-21	20.4%
-	Pigments	10%

##### Aqueous phase

[0075]

-	Trefil BY 29-119	5%
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-	Xanthan	0.3%
-	Polyamide fiber	2.5%
-	Propylene glycol	4%
-	Preservatives	qs
-	Water	[q]sp 100

[0076]

Preparation:

At ambient temperature (25°C), fibers are introduced into the propylene glycol with stirring at 1000 rpm for 30 min with a Rayneri turbine. Furthermore, the pigments are introduced into the oil/KSG 21 mixture, with stirring in a tricylinder turbine. The propylene glycol/fiber mixture is introduced into the KSG 21/oil/pigment mixture.

A foundation is obtained that is fresh upon application, soft and easily applied, ensuring aesthetic and uniform, homogeneous makeup.

#### Example 2: Tinted body gel

[0077]

-	Trefil BY 29-119	32%
-	Carbomer 980	0.6%
-	Triethanolamine (neutralizer)	0.6%
-	Polyamide fibers (0.3 mm long)	1%
-	Propylene glycol	1.8%
-	Pigments	5%
-	Preservatives	qs
-	Water	qsp 100

Preparation:

[0078]

This colored cream is made by adding organopolysiloxane to the water at ambient temperature, next by adding the neutralized gelling agent, then the pigments and preservatives. At the same time, the fibers are introduced at ambient temperature into the propylene glycol and the obtained mixture is subjected to stirring at 1000 rpm for 30 min with a Rayneri turbine. Finally, the fiber/propylene glycol mixture is introduced into the organopolysiloxane gel; then it is all mixed under Rayneri stirring for 10 to 15 min. This gel is intended especially for makeup of the body or tattooing. It enables application on small zones of the body, with a distinct outline.

The deposited film is uniform. The gel imparts an aesthetic homogeneous makeup, soft, not greasy, as assessed by a panel of 6 persons.

The gel is very matting, with great freshness upon application, good hold over time and good water resistance, in contrast to products of the prior art.

### Claims

1. Care or makeup composition for keratinous materials, containing an aqueous phase, fibers and particles of a solid elastomeric organopolysiloxane which is least partially crosslinked, the fibers and particles being dispersed in an aqueous phase and the fibers having a length much greater than their diameter.

2. Composition according to Claim 1, characterized in that the elastomeric organopolysiloxane is obtained by an addition and crosslinking reaction in the presence of a catalyst of at least:

- an organopolysiloxane (i) with at least two vinyl groups in the  $\alpha,\omega$  position of the silicone chain per molecule; and
- an organopolysiloxane (ii) with at least one hydrogen atom bonded to a silicon atom per molecule.

3. Composition according to any one of the preceding claims, characterized in that the organopolysiloxane is chosen from the polydimethylsiloxanes.

4. Composition according to any one of the preceding claims, characterized in that the elastomeric organopolysiloxane is an  $\alpha,\omega$ -dimethylvinylpolydimethylsiloxane.

5. Composition according to any one of the preceding claims, characterized in that the dispersion of organopolysiloxane particles is obtained according to the following steps:

- (a) mixture of organopolysiloxane (i) and organopolysiloxane (ii)
- (b) addition of the aqueous phase containing an emulsifier to the mixture of step (a)
- (c) emulsification of the aqueous phase and said mixture
- (d) addition of hot water to the emulsion of phase (c); and
- (e) polymerization of organopolysiloxane (i) and organopolysiloxane (ii) in emulsion in the presence of a platinum catalyst.

6. Composition according to any one of the preceding claims, characterized in that step (c) is performed in the presence of a nonionic emulsifier.

7. Composition according to any one of the preceding claims, characterized in that the particles of elastomeric organopolysiloxane obtained have a size of 0.1 to 500  $\mu\text{m}$ , optimally 3 to 200  $\mu\text{m}$ .

8. Composition according to any one of the preceding claims, characterized in that the particles of elastomeric organopolysiloxane have a hardness less than or equal to 80, optimally less than 65.

9. Composition according to any one of the preceding claims, characterized in that the elastomeric organopolysiloxane represents 0.1 to 70% of the total weight of the composition, optimally 4 to 50%.

10. Composition according to one of the preceding claims, characterized in that the fibers are chosen from fibers of silk, cotton, wool or linen, cellulose fibers extracted especially from wood, vegetables or algae, polyamide, rayon, viscose, acetate, especially acetate of rayon, cellulose or silk, poly-p-phenyleneterephthalamide, acrylate, especially polymethyl methacrylate or poly-2-hydroxyethyl methacrylate, polyolefin and especially polyethylene or polypropylene, glass, silica, aramid, carbon, especially in the form of graphite, Teflon®, insoluble collagen, polyesters, polyvinyl chloride or polyvinylidene chloride, polyvinyl alcohol, polyacrylonitrile, chitosan, polyurethane, polyethylene phthalate, fibers from a mixture of polymers, and surgical fibers.

11. Composition according to any one of the preceding claims, characterized in that the fibers are synthetic in origin.

12. Composition according to any one of the preceding claims, characterized in that the fibers are polyamide or poly-p-phenyleneterephthalamide fibers.

13. Composition according to any one of the preceding claims, characterized in that the fibers have a fineness chosen in the range of 0.15 to 30 denier, optimally 0.18 to 18 denier.

14. Composition according to any one of the preceding claims, characterized in that the fibers have a length  $L$  and a diameter  $D$  such that  $UD$  [sic;  $L/D$ ] is chosen in the range of 3.5 to 2500, preferably 5 to 500 and optimally 5 to 150.

15. Composition according to any one of the preceding claims, characterized in that the fibers have a length of 0.1 to 5 mm, preferably 0.2 to 1.6 mm.

16. Composition according to any one of the preceding claims, characterized in that the fibers have a diameter of 2 nm to 100  $\mu\text{m}$ .

17. Composition according to any one of the preceding claims, characterized in that the fibers represent 0.1 to 20 [%] of the total weight of the composition, optimally 0.5 to 10 [%].

18. Composition according to any one of the preceding claims, characterized in that it also contains a fatty phase.

19. Composition according to the preceding claim, characterized in that the fatty phase contains at least one fatty body chosen from oils liquid at ambient temperature that may or may not be volatile, waxes, gums and pasty fatty substances of animal, plant, mineral or synthetic origin and their mixtures.

20. Composition according to one of the preceding claims, characterized in that it contains at least one oil chosen from perhydosqualene; triglycerides of heptanoic or octanoic acids or even, for example sunflower seed oil, corn oil, soya oil, squash oil, grapeseed oil, sesame oil, hazelnut oil, apricot oil, macadamia oil, arara oil, castor oil, avocado oil, triglycerides of caprylic/capric acids, jojoba oil, shea butter oil; paraffin oils and their derivatives, vaseline, polydecenes, hydrogenated polyisobutene such as parleam; purcellin oil, isononyl isononanoate, isopropyl myristate, ethyl-2-hexyl palmitate, octyl-2-dodecyl stearate, octyl-2-dodecyl erucate, isostearyl isostearate, hydroxylated esters such as isostearyl lactate, octyl hydroxystearate, octyldodecyl hydroxystearate, diisostearyl malate, triisocetyl citrate, heptanoates, octanoates, decanoates of fatty alcohols; propylene glycol dioctanoate, neopentyl glycol diheptanoate, diethylene glycol diisononanoate; and esters of pentaerythritol; octyldodecanol, 2-butyloctanol, 2-hexyldecanol, 2-undecylpentadecanol or oleyl alcohol; polymethylsiloxanes (PDMS) that may or may not be volatile, linear or cyclic, liquid at ambient temperature; phenyl trimethicones, phenyl dimethicones, phenyltrimethylsiloxydiphenylsiloxanes, diphenyl dimethicones, diphenylmethyldiphenyl trisiloxanes, 2-phenylethyl trimethyl siloxysilicates, and their mixtures.

21. Composition according to one of the preceding claims, characterized in that, it also contains an aqueous phase gelling agent.

22. Composition according to the preceding claim characterized in that the aqueous phase gelling agent is chosen from xanthan gum, clays, associative polyurethanes, cellulose thickeners and crosslinked polyacrylic acids that are at least partially neutralized.

23. Composition according to one of the preceding claims, characterized in that among others, it contains a coloring material.

24. Composition according to one of the preceding claims, characterized in that it also contains a particulate phase present at 0 to 60% of the total weight of the composition, preferably 5 to 35%.

25. Composition according to one of the preceding claims, characterized in that it also contains a cosmetic or dermatological active substance.

26. Composition according to one of the preceding claims, characterized in that it is presented in the form of a hydrophilic gel, oil-in-water or water-in-oil emulsion, rigid or flexible, possibly cast as a stick or into a small dish.

27. Composition according to one of the preceding claims, characterized in that it also contains at least one ingredient chosen from antioxidants, essential oils, preservatives, fragrances, liposoluble polymers, gelling agents for the liquid fatty phase, waxes, gums, fillers, dispersants, compounds miscible with water, and their mixtures.

28. Composition according to one of the preceding claims, characterized in that it is presented in the form of a foundation composition, blush or eyeshadow, a concealer product, makeup for the body, lipstick, eyeliner, mascara, nail polish, care base, or fixing base for the lips, a dermatological product for care of the skin or keratinous fibers, composition for sun protection or artificial tanning, a cleansing product for the skin or keratinous fibers.

29. Care or treatment cosmetic procedure for keratinous materials of human beings, consisting of the application of the cosmetic composition on these keratinous materials according to any one of the preceding claims.

30. Cosmetic procedure for obtaining a homogeneous makeup, consisting of introducing into a composition particles of a solid elastomeric organopolysiloxane that is at least partially crosslinked in dispersion in an aqueous phase, in conformance with Claims 2 to 9, and fibers in conformance with Claims 10 to 17.

31. Cosmetic use of particles of a solid elastomeric organopolysiloxane that is at least partially crosslinked and fibers, the particles and fibers being dispersed in an aqueous phase, in a water-resistant care makeup composition for keratinous fibers and/or imparting a makeup or homogeneous and/or matting and/or freshening effect.

32. Use according to Claim 31, characterized in that the particles of organopolysiloxanes are in conformance with one of Claims 2 to 9.

33. Use according to Claim 31 or 32, characterized in that the fibers are in conformance with one of Claims 10 to 17.

European  
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## EUROPEAN SEARCH REPORT

<b>DOCUMENTS CONSIDERED TO BE RELEVANT</b>			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl. <sup>7</sup> )
A	EP 0 295 886 A (TORAY SILICONE CO.) December 21, 1988 (1988-12-21) * Claim 1 *	1	A61K7/48 A61K7/02
A	--- EP 0 293 795 A (GENERAL ELECTRIC CO.) December 7, 1988 (1988-12-07) * Claim 1 * -----	1	
			<b>TECHNICAL FIELDS SEARCHED (Int. Cl.<sup>7</sup>)</b>
			A61K
The present search report has been drawn up for all claims.			
Place of search THE HAGUE		Date of completion of the search October 13, 2000	Examiner Glikman, J-F
<b>CATEGORY OF CITED DOCUMENTS</b>			
X: Particularly relevant if taken alone. Y: Particularly relevant if combined with another document of the same category. A: Technological background. O: Non-written disclosure. P: Intermediate document.		T: Theory or principle underlying the invention. E: Earlier patent document, but published on, or after the filing date. D: Document cited in the application. L: Document cited for other reasons. ..... &: Member of the same patent family, corresponding document.	



APPENDIX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN  
PATENT APPLICATION NO.

EP 00 40 1619

In this appendix, the patent family members of patent documents listed in the above-referenced European Search Report are indicated.

The data on the family members correspond to the state of the files of the European Patent Office on These data serve only for information and are given without guarantee

October 13, 2000

Patent document listed in the search report		Date of publication	Member(s) of the patent family		Date of publication
EP 295886	A	December 21, 1988	JP	4066446 B	October 23, 1992
			JP	63313710 A	December 21, 1988
			CA	1319306 A	June 22, 1993
			DE	3867329 A	February 13, 1992
EP 293795	A	December 7, 1988	JP	1925121 C	April 25, 1995
			JP	6051614 B	July 6, 1994
			JP	63297313 A	December 5, 1988
			DE	3865530 A	November 21, 1991
			US	4892726 A	January 9, 1990

For additional details regarding this Appendix: see Official Journal of the European Patent Office No. 12/82